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AUTHOR Anderson, Beverly L.
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INSTITUTION InSites, Boulder, CO.
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ABSTRACT

The education system, like most organizational structures, needs fundamental changes to keep pace with the social and economic conditions of an increasingly complex global society. Taking an aerial view, this paper describes the topography of systemic change to provide multiple stakeholders a better vantage point for communicating and making decisions about their own systems. Education systems are shifting away from: learning based on time spent in the classroom; teaching done mainly via information delivery; a hierarchical, control-oriented organizational structure; and a system operating separately from other youth services. The shift is toward systems dominated by: (1) learning determined by demonstrable skills, knowledge, and habits focused on higher level understanding, communication, problem solving, decision making, and teamwork; (2) an instructional approach that actively engages students and employs teachers as coaches, critics, and learning facilitators; (3) an organizational structure stressing participative decision making and supportive leadership, and (4) an education system more connected with other youth-serving systems. Six stages of change characterize these changes: maintenance of old system, awareness, exploration, transition, an emerging new infrastructure, and predominance of the new system. Six key elements that are emerging across the country as being particularly important in helping states, districts, and schools move from an old system to a new system are: vision, public and political support, networking, teaching and learning approaches, administrative roles/responsibilities, and policy realignments. (MLH)

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A Framework for Understanding and Assessing Systemic Change

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Beverly L. Anderson
InSites, A Support Network for Educational Change
1877 Broadway, Suite 405
Boulder, CO 80302
(303) 444-3115

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Anderson is Executive Director of InSites, A Support Network for Educational change in Boulder, CO. She was formerly at the Education Commission of the States (ECS) with one of her responsibilities being director of the Re:Learning systemic change initiative. The continuum builds on work done through Re:Learning, the 1991 ECS Business Education Policy Form and InSite's Project on Systemic Change Assessment Strategies. The development of the continuum was partially supported through funding to ECS through the National Science Foundation grant, TPE-9150166. Appreciation is expressed to Jane Armstrong, Sheila Arredondo, Rex Brown, Van Dougherty, Lois Easton, Robert Palaich and others at ECS for their involvement in its development. Appreciation is also expressed to the Re:Learning sites, especially those in New Mexico (the first site to be involved in the development of the continuum, the directors of the National Science Foundation's State Systemic Initiative grants and many others who have provided helpful input that has enriched the continuum, its description, and uses.

A Framework for Understanding and Assessing Systemic Change

Principal of a restructuring high school: At first I didn't see the magnitude of the change. I thought if we just did better what we had always done, we would be OK. Then I had this deep sinking feeling in the pit of my stomach—that's not going to do it. We have to do something totally different. But I didn't know what to do instead.

Gradually as I searched around with a more open mind, I saw new approaches that seemed promising and worth exploring. But then once we started to try some of these new ideas, we realized that one change led to another and another and another and ... It was unending. It was like dominos!

We finally realized the structures of the old system weren't sacred—45 minute periods, grade levels, subject areas defined a hundred years ago. We began to see new connections among teachers, subject areas, students. We saw new relationships and roles were possible among teachers, students, parents, administrators—even with legislators. A new structure, a new system was emerging. I started to see what people meant when they talked about system change. A new energy and excitement surged among us as hope grew and the cloudy vision of what we wanted became clearer and clearer.

Our education system is being transformed. We'll never go back.

This is a story shared by administrators all across the country, a story which bears witness to the emerging recognition that the education system, like most organizational structures of society, need fundamental changes to keep pace with the social and economic conditions of an increasingly complex global society.

Despite all the talk of systemic change, it's hard to find descriptions of the patterns which generally underlie systemic change. The deeper people get into the process of change, the more confusing the process becomes and the greater the need for some sense of what to expect, directions to take and toward what ends.

Taking an aerial view, this paper describes the topography of systemic change in order to provide multiple stakeholders of the education system a better vantage point from which to communicate and make decisions about their specific system.

Stakeholders in a system tend to see change from their own perspective and to focus solely on the intricacies of their own situation. Often, one group of stakeholders (say, teachers) does not understand what is seen by other groups (administrators and parents, for example). Nor do administrators or parents see change from a teacher's perspective, or from each other's.

In this paper, we rise above singular viewpoints to the perspective of overall change. From this elevation, the patterns of change appear as clearly as do the patchwork fields across the midwest from the window of a plane at twenty-two thousand feet. And while the complexities that arise remain when multiple stakeholders jointly work for change, an aerial view can give a picture of the whole that helps determine some of the most fundamental aspects that all stakeholders need to perceive.

Where Are We headed?

Systemic change is greatly enhanced when we know what we are changing **from** and what we are changing **to**. A synthesis of the research and experiences of those engaged in systemic change provides commonalities of what we are leaving behind and where we are going. In general, education systems are shifting away from systems dominated by these characteristics:

- learning based on the time students spend in the classroom
- teaching done mainly via delivery of information
- an organizational structure which is very hierarchical and oriented toward control of those within it
- an education system operated separately from other systems that serve youth

The shift is toward systems dominated by these characteristics:

- learning determined by the skills, knowledge and habits of which students can demonstrate achievement with emphasis on higher level understanding, communication, problem solving, decision making and teamwork
- an instructional approach where students are actively engaged and teachers serve as coaches, critics and facilitators of learning
- an organizational structure where decision making is distributed throughout the organization and where the leadership focuses on support of, rather than control of, those in the system
- an education system more connected with other youth-serving systems

These are broad generalizations. Although each state and locale has its own variations, these characteristics seem to dominate the current view of what needs to change, and is changing, in the education systems of America.

The process of change that occurs when an education system dominated by the first set of characteristics given above seeks to move to a system dominated by the second set of characteristics can be described in terms of two dimensions: general developmental stages people and systems undergo, and the key elements that reflect the transition. The combinations of these two dimensions can be depicted as a matrix. (See Figure 1.)

The matrix or framework in Figure 1 was built from a composite of experiences of people and places across the country involved in systemic change and is unlikely to be precisely in keeping with every situation. It does, however, provide a synthesis of what is known from research and experience, thus allowing future change to build on this knowledge base rather than reinvent it.

Readers are encouraged to adapt this framework to their own situation so that it informs their particular pattern and strategy of change.

Stages of Systemic Change

Six stages of change tend to characterize the shifts from one type of education system to another. Although they are displayed in Figure 1 as linear and distinct for easy graphic depiction, an education system is seldom, if ever, clearly at one of these stages. It is also unlikely that the change will follow a linear path. There will be "Brownian motion" back and forth from one stage to another as the general path toward an ideal situation develops.

The six stages used in the framework are:

Maintenance of Old System: At this point, the focus is on doing a good job of maintaining the system as originally designed many years ago. The system was based on theories of teaching, learning and organizational structures that may well have been among the best available at the time and for that context. When people are at this stage, there is little recognition that the system is fundamentally out of sync with the conditions of today's world or that important new knowledge about teaching, learning and organizational structures has not be incorporated.

Awareness: At this stage, there is a growing recognition from multiple stakeholders that the current system is not working as well as it could and should. Discussions are held of what the needed changes might be. There is recognition that something is wrong with the current system but it is not clear what is needed instead.

Exploring: At the exploring stage, people engage in study and visit places that are trying new approaches to teaching, learning and organizational functioning. Serious discussions about the applicability of new approaches are underway. Educators and policy makers try new ways to teach and manage the system but generally in low risk ways and situations.

Transitioning: When transitioning, the scales tip toward the new system--a critical number of opinion leaders and the members of various groups support the design of the new system. They make commitments to the new system and take more serious risks to make changes in key places within the system.

Emerging New Infrastructure: In this stage, selected elements of the system are widely operated in ways that are in keeping with the desired new system rather than the old system. These new ways are becoming generally accepted.

Predominance of New System: At this point, more and/or the more powerful characteristics of the system are operating in keeping with the definition of the new system rather than the definition of the old system. It is likely, as well, that key leaders are beginning to envision an even better system that will be more in keeping with society at this point.

A Continuum

Stages of Change

Elements of Change	Maintenance of Old System	Awareness	Exploring
Vision	- Vision reflects: - Learning based on seat time - Teaching as lecture - Mandates and inputs - Education system separate from other systems	- Multiple stakeholders realize need to change from old system, but unclear what to change to - Strategic plans, study group reports from influential groups call for fundamental changes getting some attention	- Alternatives to old system begin to emerge in piecemeal fashion - Stakeholder groups promote new ideas about parts of the system - New examples visited/debated - Growing numbers and types of stakeholders being drawn together around change
Public & Political Support	- Support generally taken for granted - Only becomes of concern when finances are needed - Public informed, not engaged, by educators	- Reports on need for changes in education discussed among policy makers, in news media - Public forums on need for change with input from public encouraged	- Task forces formed to recommend changes for district, school - Political/public opinion leaders speaking out on selected issues - Minor resource allocations to explore possibilities - Public involvement in redefining desired student learning outcomes
Networks, Networking, and Partnerships	- Networking among peers often seen as subversive or insignificant - A few teachers within schools begin to network - Partnerships are one-shot, supplemental	- Recognition of value of networking as a way of learning new operations of education system - A critical mass of teachers in a school explore joining restructuring networks - Realization that partnerships need to be longer term and more integral to school mission	- Networks (including electronic) used as a way to speed up sharing of information and new ideas - Networks joined across schools, districts, state - Whole schools join networks - School leaders begin conversations with potential partners on core educational issues
Teaching & Learning Changes	- Emphasis placed on using standard curriculum, instruction, assessment methods more rigorously - High attention to standardized test results and ways to raise scores	- Recognition that traditional teaching and learning methods are not based on current research about learning - Recognition by administrators, public, teachers that education problems are due to social, economic, technological changes that are broader than education	- Individual schools, teachers, districts debating and committing resources to learning and using new ways of teaching - Multi-person and multi-year commitments to try new teaching and learning approaches - New modes of assessing learning explored, developed - Learning outcomes being defined
Administrative Roles & Responsibilities	- Role/responsibility seen as: - Diminish conflict - Emphasize standardization of approaches, following rules, regulations - Serve as major channel, source of information - Top-down decision making	- Administrators (at all levels) recognize need to change roles to better support change & learning by teachers - New roles, responsibilities for administration discussed - Media attention on innovative leaders	- Site based decision making (SBDM) approaches piloted - Professional development for administrators focuses on new roles/responsibilities - Bureaucratic layers questioned, vacant positions not filled - Administration learning to allocate resources to support learning outcomes
Policy Alignment	- State, district policy emphasizes: - Textbook selection - Standardization of instruction methods - Standardized test, comparisons among schools on student achievement - Hierarchical organizational structure - Program evaluation results used as bias for blaming and fault finding	- Recognition that standardized tests not measuring all desired learning outcomes - Attention directed to performance assessment to support desired - Recognition that low achievement may be due to broader conditions rather than poor teaching - Debates on how to use policy to help lead reform rather than force change - Waivers to regulations made available to promote experimentation	- Schools, districts, states explore new modes of student assessment - Policies debated, enacted, piloted to define graduation based on demonstrated learning rather than courses taken - New policies piloted on curriculum frameworks with higher learning for all

of Systemic Change

Stages of Change

			Elements of Change
Transitioning	Emerging New Infrastructure	Predominance of New System	
- Emerging consensus on new system components - Old components disparaged/shed - Need for linkages of new components within system is understood	- Continual vision development seen as major force for change - Vision includes student outcomes, system structure, underlying beliefs - Recognition of need for continual refinement, development of vision with expanded stakeholder involvement	Broad agreement on what in the desired system: - All students learn at higher levels - Learning means achieving and applying skills, knowledge - Teacher as coach, critic, facilitator - Distributed decision making - Vision-setting leadership - Connections to other social systems	Vision
- Public debate on specific changes with mixed support - Opinion leaders campaign for change - Resistant groups vocal - More resources allocated for innovation - Diversity of population recognized	- Ongoing commissions, task forces established to maintain momentum for change as political leaders come and go - Resources for innovation are ongoing with emphasis on meeting diverse student needs - Public engaged in change	- Public, political, business involvement and connection seen as essential feature of system - Allocation of resources based on new vision supported	Public & Political Support
- Recognition that networks are a long term feature of a less hierarchical system - Debates on how the district can support ongoing networks - Disenfranchised groups (e.g., teachers, ethnic groups) use networks for long term empowerment	- Networks seen as accepted practice - Networks act as major source of new knowledge - Empowerment issues debated - Multiple partners support vision and student learning	- Resources allocated for networks - Effective network operations developed - Networks serve as communication and information channels - Empowerment issues being resolved	Networks, Networks, and Partnerships
- Significant numbers of teachers, schools, districts intensely trying new approaches - Teachers given time for planning - Recognition of depth of change needed and difficulty, time and resources required - Teachers convinced it's not a fad - Changes being assessed	For significant numbers of schools: - State, district teaching/learning assessments encourage continual improvement, recognize uneven progress - Graduation based on demonstrations of established learning outcomes - Teaching methods actively engage students - Heavy and ongoing investment in teacher development	For most schools in district it's the norm: - To have students actively engaged in learning - Student assessments show continual improvement on skills, knowledge established in vision as desired outcomes - Outcome focus used in teacher and administrator preparation programs	Teaching & Learning Changes
- Methods of distributing decision making to lower organizational levels developed - Emphasis on outcomes to be achieved with flexibility in how they are achieved - Allocates resources to support continual learning by teachers	- Administrators hired using new criteria for leadership/management - Policy supports SBDM - Required school-community councils - Teachers responsible for instructional decisions - Infrastructure supports school change to match vision	Administrators expected to: - Encourage rethinking, improvement - Encourage flexibility in approaches to meet needs of all students - Allocate resources to support student learning rather than rigid categories - Determine SBDM for learning, equity	Administrative Roles & Responsibilities
- Task forces define student learning outcomes, frequently based on national standards - Policies enacted that give schools latitude to redesign their teaching and learning approaches - Recognition that all policy needs review to determine what system is supports	- Exit learning outcomes developed by broad based stakeholder groups at state, district, school levels; outcomes emphasize problem solving, more complex learning for all - Multiple means of measuring student learning used; inclusion of demonstrated skills, knowledge - Major review of policy for realignment to support new system - Policies across education, health, social services, etc. interconnected	Policy at school, district, state supports: - Ongoing rethinking, continual improvement - Allocating resources to support student learning - Curriculum frameworks with high student standards - Learning outcomes guide decisions at all levels of system including classroom - Flexible instructional materials/methods to meet diverse student needs - Alternative modes of assessment	Policy Alignment

Key Elements to be Changed

Having multiple levels and stakeholders from the schoolhouse to the statehouse, the education system is highly complex. Understanding and shaping systemic change requires some way of focusing on a few high-leverage elements in the change process. Based on work and research at all levels of the system, six key elements of the education system have been identified below to be highlighted and monitored. These elements are ones that are emerging across the country as being particularly important in helping states, districts, and schools move from an old system to a new system. Just as medical doctors may identify and monitor a few functions (such as the heart and lungs) while understanding that the interconnections between the functions provides the vitality of the bodily system, so too we understand that the composite of these six elements gives the education system its livelihood.

Vision: The vision or mental image that people have of what the education system should look like and what it should be accomplishing is key in bringing about change. It is also important that the image develops among many numbers and types of people. The stages of development of the vision are characterized by increasing clarity and agreement on what the new system is to look like by increasing numbers and types of people.

Public and Political Support: As the vision develops and translates into practice, it is essential that the general public and the political leadership at all levels of the system grow in their support of the new system. Such support involves a deepening understanding of the "what" and "why" of changes needed. Issues surrounding the inclusion of diverse populations appears to be a key aspect of building support.

Networking: One key strategy in establishing lasting systemic change is to build networks that study, pilot, and/or in other ways support a new vision of the education system. The networks typically do not rely on the existing bureaucratic structure. Frequently networks link people of similar roles across existing organizational lines. For example, teachers of differing districts and states will connect; political advisors from multiple states will meet; and principals of restructuring schools throughout the country will share experiences. The networks are often facilitated by computer linkages, newsletters, conferences and personal communications among people who have become acquainted, established mutual respect and found similarities in what they are attempting to do.

Teaching and Learning Changes: At the core of the new system is teaching and learning based on the best available research on how people learn. Closely related is the perspective that all students need and can learn the higher level skills of understanding, communication, problem solving, decision making and team work. If changes do not actually occur in teaching and learning, all the other changes are of little value. **Thus, this element is presented in the center of the framework.**

Administrative Role/Responsibilities: To achieve change in the classroom, administrative roles and responsibilities need to change at the school, district and state levels. The changes relate to the shift from a hierarchical structure of control to one of support and shared decision making.

Policy Realignment: State and local policy need to be aligned around the beliefs and practices of the new system instead of the traditional policy of the old system. Of particular importance are areas of teaching and learning policy related to curriculum frameworks, instructional methods and materials, student assessment practices, resource allocation and the inclusion of all types of students.

Making simultaneous changes in the above six elements requires conscious planning. The process is akin to that of remodeling a building while people are still using it: the acts of reconfiguration, redesign, and realignment need to be careful, staged to keep the building at least partially functional.

The framework given in Figure 1 provides much more detail on the specifics of each element as it changes from the old system to the new one.

Using the Framework

This framework and various modifications of it are proving particularly useful in three ways:

- Developing a common language and conceptual picture of the processes and goals of change among diverse stakeholders.
- Developing a strategic plan for moving forward on systemic change.
- Developing an ongoing assessment process that will support and encourage depth and quality of the change process.

A Common Language and Conceptual Picture. Each stakeholder tends to see the system primarily from his/her own vantage point--the policy maker focuses on policy, the administrator on the management issues, the teacher on the classroom interactions, the parents on what the student is becoming. Once stakeholders see the issues and perspectives of the others, they are better positioned to take actions that will support and enhance others' specific situations.

Example: One of the nation's earliest and largest restructuring efforts is Re:Learning, a joint initiative of the Coalition of Essential Schools, the Education Commission of the States, and, now, nearly a dozen states. Re:Learning focuses on redesigning schools along the lines of nine research-based principles of teaching and learning. The effort also zeros-in on the necessary administrative and policy realignments at district and state levels needed to support the school changes. Re:Learning advocates have used frameworks similar to the one described in this paper at various points and in various ways to develop common understandings and to engage multiple stakeholders in discussions about the goals and strategies of systemic change.

Strategic Planning. Once systemic change is underway, people often develop a sense of being overwhelmed by the magnitude of the task. A framework such as this one can be used to specify what steps to take next.

Example: State mathematics and science curriculum directors, directors of state systemic initiatives funded by the National Science Foundation and others used the framework at a national conference to analyze their own state's progress on systemic change. Using both informal information about their state and more systematically gathered data, they looked at the pattern of change among the six elements. Many found that they were moving along reasonably well on the vision, policy realignment and shifts in administrative roles, but the number of schools where classroom teaching and learning practices was actually occurring was small and public support was lagging. They realized these were the areas that needed special attention if the full system was to change.

Assessing Progress. The framework can also be used as the basis for creating an evaluation design for understanding what supports and processes help systems move forward on systemic change.

Example: The framework is being used as the basis of the evaluation design of a private organization that is funding a number of districts within a state to make fundamental changes in how science is being taught. In another state it is being used as the basis for evaluating the progress of change among districts and communities that are redesigning arts education. In each of these cases, the framework provides the basis for making decisions about the focus of the evaluation, the type of data collected and the modes of analysis and reporting.

Whatever the use of the framework, it is important to have all aspects of the system move forward. A physician doesn't say, "Well, I guess I won't worry too much about that heart problem. The other five bodily functions I looked at seemed to be fine." So too, all aspects of the education system need to be nurtured to bring about the systemic change that will create a transformed way of educating America's youth.